

Amendment to the Claims

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

Claims 1 – 55 (canceled)

Claim 56 (currently amended) A method for wrapping a texture onto a surface of a three-dimensional virtual object, the method comprising ~~the steps of:~~

~~(a) selecting an arbitrarily shaped user defined region of a surface of a three-dimensional virtual object; and~~
~~— (b) — for each of a plurality of locations in a user-defined region of the surface of the three-dimensional virtual object the region:~~

(i) mapping the location in the ~~selected~~ user-defined region to a corresponding location in a texture according to a mapping scheme wherein points of a planar mesh are adjusted to account for a spacing of corresponding points within the user-defined region of the surface of the three-dimensional virtual object, and wherein the texture is superimposed onto a patch based on the adjusted planar mesh; and

(ii) assigning to the location in the ~~selected~~ user-defined region a graphical value associated with the location in the texture.

Claim 57 (currently amended) The method of claim 56, further comprising the step of:

~~— (e) —~~ graphically rendering the virtual object.

Claim 58 (currently amended) The method of claim 57, further comprising the step of:

———(d)———modifying a voxel representation of the virtual object according to the graphical values assigned in step (ii)~~(b)~~.

Claim 59 (original) The method of claim 56, wherein the texture comprises a tiled pattern.

Claim 60 (original) The method of claim 59, wherein no boundary of a tile of the tiled pattern is constrained to align with a boundary of the user-defined region.

Claim 61 (currently amended) The method of claim 59, further comprising the step of:

———(e)———graphically rendering the virtual object with the tiled pattern applied within the user-defined region.

Claim 62 (original) The method of claim 56, wherein the graphical value is a color value.

Claim 63 (original) The method of claim 56, wherein the texture comprises an embossing pattern and wherein the graphical value represents an adjustment along a normal to the surface of the virtual object.

Claim 64 (currently amended) The method of claim 63, further comprising the step of:

———(e)———graphically rendering the virtual object with the embossing pattern applied within the user-defined region.

Claim 65 (new) The method of claim 56, wherein the points of the planar mesh are adjusted to improve a quality metric associated with the spacing of corresponding points within the user-defined region of the surface of the three-dimensional virtual object.

Claim 66 (new) The method of claim 65, wherein the mapping scheme models at least a plurality of the points of the planar mesh as connected by springs, and wherein the points of the planar mesh are adjusted to reduce an energy associated with the springs.

Claim 67 (new) The method of claim 66, wherein the points of the planar mesh are adjusted to minimize the energy associated with the springs.

Claim 68 (new) The method of claim 56, wherein the user-defined region is arbitrarily shaped.

Claim 69 (new) The method of claim 56, wherein the mapping step does not require geometric projection.

Claim 70 (new) An apparatus for wrapping a texture onto a surface of a three-dimensional virtual object, the apparatus comprising:

a memory for storing code that defines a set of instructions; and

a processor for executing the set of instructions to:

for each of a plurality of locations in a user-defined region of the surface of the three-dimensional virtual object:

(i) map the location in the user-defined region to a corresponding location in a texture according to a mapping scheme wherein points of a planar mesh are adjusted to account for a spacing of corresponding points within the user-defined region of the surface of the three-dimensional virtual object, and wherein the texture is superimposed onto a patch based on the adjusted planar mesh; and

(ii) assign to the location in the user-defined region a graphical value associated with the location in the texture.

Claim 71 (new) The apparatus of claim 70, wherein the code comprises instructions to graphically render the virtual object.

Claim 72 (new) The apparatus of claim 71, further comprising a graphical display on which the virtual object is rendered.

Claim 73 (new) The apparatus of claim 70, wherein the code comprises instructions to adjust the points of the planar mesh to improve a quality metric associated with the spacing of corresponding points within the user-defined region of the surface of the three-dimensional virtual object.

Claim 74 (new) The apparatus of claim 73, wherein the code comprises instructions to model at least a plurality of the points of the planar mesh as connected by springs, and to adjust the points of the planar mesh to reduce an energy associated with the springs.

Claim 75 (new) The apparatus of claim 74, wherein the code comprises instructions to adjust at least a plurality of the points of the planar mesh to minimize the energy associated with the springs.

Claim 76 (new) The apparatus of claim 70, wherein the user-defined region is arbitrarily shaped.